

Lab scientist from Española provides technical assistance to small New Mexico businesses

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When he is in his office at Los Alamos National Laboratory, scientist Marvin Salazar spends his days analyzing the United States' energy infrastructure for a variety of projects, and he also predicts the impacts of natural and human-caused grid disruptions for the Department of Homeland Security. If a hurricane is hurling across the Gulf of Mexico, for example, Salazar and his colleagues estimate outage areas before the storm even touches land.

In addition, Salazar travels across New Mexico as part of the New Mexico Small Business Assistance (NMSBA) Program, which offers small businesses facing a technical challenge the unique expertise and capabilities available at the Los Alamos and Sandia National Laboratories. Assistance is provided at no cost to the businesses

and can include testing, design consultation and access to special equipment or facilities.

With his energy expertise in hand, Salazar might drive down to Milagro Ranch near Santa Rosa, for instance, to analyze the ranch land's potential for wind and solar power generation. Or he might drive up to Mora County to help purchase and install a wind metering tower at the Union Land and Cattle Company.

Many of the ranchers and farmers that Salazar visits have been greatly affected by New Mexico's recent droughts and have had to reduce the number of cattle and crops they raise. Using their land for wind and solar energy production often is seen as a viable business option.

"I enjoy driving through New Mexico," Salazar said. "I see rugged terrain with deer, antelope and amazing landscape colors that I most likely never would have encountered if it were not for my participation in the NMSBA projects. And I get to meet good, hard-working ranchers, farmers and other small business owners who are glad that I'm there to help with what could potentially be a new, profitable and welcomed way of doing business."

Exploring renewable energy

To help small business owners decide whether renewable energy can provide an income for them, Salazar begins by measuring the location's wind speed or solar intensity over time, recording the land's topography and checking the surrounding electric power system. He also investigates existing power line capacities to see whether a new renewable energy installation could connect to the current power grid or might require the addition of a new power line, and he makes sure that there are existing roads for access to the potential equipment site.

After returning to Los Alamos, Salazar analyzes the collected data to calculate a given location's possible power output, prepares a report for the respective small business and is available to answer questions.

In the case of Santa Rosa's Milagro Ranch, which decided to form a partnership called the Siempre Wind Project with another ranch, Salazar found that the ranches' combined 38,000 deeded acres are suitable for a large-scale wind energy conversion system ("wind farm"), which would consist of a large array of wind turbines south of Interstate 40.

Some of the factors that contributed to the feasibility of a potential wind farm for the Siempre Wind Project were favorable wind conditions; a suitable terrain for the construction and operation of wind turbine arrays; ready, construction-grade road access; the proximity of a 138 kV electric transmission right-of-way and a planned 345 kV line extension; no known occurrences of endangered species; and limited regulatory requirements affecting development in rural New Mexico.

Salazar sees renewable energy possibilities in his own home county of Rio Arriba as well. "Rio Arriba has small businesses that would qualify for NMSBA assistance," he explained. "I sometimes drive by a sand-and-gravel outfit, for example, that seems to have enough land for a solar installation and maybe even wind. I'm thinking of stopping by some day to talk to them."

For more information on the technical assistance available to small businesses, consult the [New Mexico Small Business Assistance](#) website.

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